YAKEEN-2022

Balancing of redox reaction and n factor calculation
[DPP-13]

1. In the equation, $SnCl_2 + 2HgCl_2 \longrightarrow Hg_2Cl_2 + SnCl_4$. The equivalent weight of stannous chloride (molecular weight = 190) will be :
(A) 190 (B) 95
(C) 47.5 (D) 154.5

2. The number of electrons lost or gained during the change $Fe + H_2O \rightarrow Fe_3O_4 + H_2$ is
(A) 2 (B) 4
(C) 6 (D) 8

3. MnO_4^- is a good oxidising agent in different medium changing to
$$MnO_4^- \rightarrow Mn^{2+}$$
$$\rightarrow MnO_4^{2-}$$
$$\rightarrow MnO_2$$
$$\rightarrow Mn_2O_3$$
Changes in oxidation number respectively are
(A) 1,3,4,5 (B) 5,4,3,2
(C) 5,1,3,4 (D) 2,6,4,3

4. The value of n in $MnO_4^- + 8H^+ + ne^- \rightarrow Mn^{2+} + 4H_2O$ is
(A) 5 (B) 4
(C) 2 (D) 3

5. In which of the following oxygen shows -1 oxidation state?
(A) H_2O_2 (B) CO_2
(C) H_2O (D) OF_2

6. In the reaction ; $2Ag + 2H_2SO_4 \longrightarrow Ag_2SO_4 + 2H_2O + SO_2$, H_2SO_4 act as :
(A) Oxidising agent (B) Reducing agent
(C) Dehydrating agent (D) None of these

7. $aK_2Cr_2O_7 + bKCl + cH_2SO_4 \longrightarrow xCrO_2Cl_2 + yKHSO_4 + zH_2O$.
The above equation balances when
(A) a = 2, b = 4, c = 6 and x = 2, y = 6, z = 3
(B) a=4,b=2,c=6 and x=6,y=2,z=3
(C) a=6,b=4,c=2 and x=6,y=3,z=2
(D) a=1,b=4,c=6 and x=2,y=6,z=3

8. Which is the best description of behaviour of bromine in the reaction given below?
$H_2O + Br_2 \longrightarrow HBr + HOBr$
(A) Proton accepted only
(B) Both oxidised and reduced
(C) Oxidised only
(D) Reduced only

9. In the reactions; $As_2S_3 + HNO_3 \longrightarrow H_3AsO_4 + H_2SO_4 + NO$, the element oxidized is/ are
(A) As only (B) S only
(C) N only (D) As and S both

10. In $C + H_2O \longrightarrow CO + H_2$; H_2O acts as ꞉
(A) Oxidant (B) Reductant
(C) Both (a) and (b) (D) None of these

11. In the conversion of Br_2 to BrO_3^-, the oxidation number of Br changes from
(A) Zero to +5 (B) +1 to +5
(C) Zero to -3 (D) +2 to +5

12. Oxidation number of sodium in sodium amalgam is :
(A) +2 (B) +1
(C) -2 (D) zero

13. The reaction, $3ClO^-(aq) \longrightarrow ClO_3^-(aq) + 2Cl^-(aq)$ is an example of : is
(A) Oxidation reaction
(B) Reduction reaction
(C) Disproportionation reaction
(D) Decomposition reaction

14. Oxidation state of nitrogen is incorrectly given for:

Compound	Oxidation state
(A) $[Co(NH_3)_5Cl]Cl_2$	-3
(B) NH_2OH	-1
(C) $(N_2H_5)_2 SO_4$	$+2$
(D) Mg_3N_2	-3

15. In the ionic equation,
$$BiO_3^- + 6H^+ + xe^- \longrightarrow Bi^{3+} + 3H_2O$$
The values of x is
(A) 6   (B) 2
(C) 4   (D) 3

16. Oxidation number of S in S_2Cl_2 is :
(A) $+1$ (B) $+6$
(C) Zero   (D) -1

17. White phosphorus reacts with caustic soda, the products are PH_3 and $NaH_2 PO_2$. This reaction is an example of
(A) Oxidation
(B) Reduction
(C) Disproportionation
(D) Neutralisation

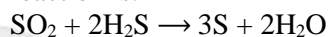**18.** Oxidation states of X, Y, Z are +2, +5 and −2 respectively. Formula of the compound formed by these wii be
(A) X_2YZ_6 (B) XY_2Z_6
(C) XY_5 (D) X_3YZ_4

19. In the reaction, $2Na_2S_2O_3 + I_2 \longrightarrow Na_2S_4O_6 + 2NaI$, the oxidation state of sulphur is :
(A) Decreased   b) Increased
(C) Unchanged   d) None of these

20. Equivalent mass of oxidizing agent in the reaction is.
$$SO_2 + 2H_2S \longrightarrow 3S + 2H_2O$$
(A) 32   (B) 64
(C) 16   (D) 8

ANSWERS

1. (B)
2. (D)
3. (C)
4. (A)
5. (A)
6. (A)
7. (D)
8. (B)
9. (D)
10. (A)
11. (A)
12. (D)
13. (C)
14. (C)
15. (B)
16. (A)
17. (C)
18. (B)
19. (B)
20. (C)

Note – If you have any query/issue

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